

VIA AFRIKA DIGITAL EDUCATION ACADEMY

# Digital learning in schools

SESSION 6

Games and gamification in education

CLASS NOTES



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# Course content

## Digital learning in schools

Session 1: Why eLearning?

Session 2: Getting technical

Session 3: Managing and using ICTs in schools

Session 4: Content and apps for teaching

Session 5: Online assessment tools

Session 6: Games and gamification in education

# Digital learning in schools

## Session 6: Games and gamification in education

### Class Notes



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4. Please remember that devices and apps are updated all the time, so the device specifications, app features and icons that you see here might differ slightly depending on the device you're using and any subsequent app updates.

## Abbreviations and terms

**Bloom's Revised Taxonomy:** A pedagogical framework for eLearning. [See pedagogy, See eLearning]

**eLearning:** Learning that is supported by, enhanced by, or facilitated through Information Communication Technologies (ICTs), and that is supported by reconsiderations of content, and a relevant pedagogy. [see ICT]

**ICT:** Information and communication technologies.

**PD Points:** Professional Development Points [See SACE]

**Pedagogy:** The how and why of what we do in the classroom. The method and practice of teaching, especially as an academic subject or theoretical concept.

**PedTech:** Pedagogical Technology for what happens when we want to use technology in the classroom

**RAT:** Replace, Amplify, Transform. A pedagogical framework for eLearning. [See pedagogy, See eLearning]

**SACE:** South African Council for Educators. Awards Continuous Professional Development Points (CPDP) to teachers.

**SAMR:** Substitution, Augmentation, Modification, Redefinition. A pedagogical framework for eLearning. [See pedagogy, See eLearning]

**TPACK:** Technological, Pedagogical and Content Knowledge. A pedagogical framework for eLearning. [See pedagogy, See eLearning]

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# Outcomes and content

## Outcomes of the session

By the end of the session, the participant will be able to:

- understand how and why to use games and gamification in education
- define what gamification is and understand why it is so engaging for learners
- appreciate gamification's uses in real life and learning
- know how to use scavenger hunts and treasure hunts in the classroom
- know how to create and use QR Codes to enhance learning
- have a list of steps to follow to design a game
- have a list of steps to follow to design a gamification experience
- understand the main elements of a game – goal, quest, mission, challenge, task, points, leaderboard, levels, rewards
- know how to use ready-made online gamification solutions

## Content of the session

This session will focus on:

- a brief introduction to using games and gamification in education
- rewards of gamification – learner engagement; higher learner marks; personal success
- theory of gamification, including terminology (quest, mission, challenge, task, points, leaderboard, time)
- scavenger hunts and treasure hunts
- QR Codes (creation and use)
- designing a game
- evaluating gamification experiences
- creating a gamification experience in a classroom
- exploring ClassDojo and Classcraft as examples of ready-made online gamification solutions

# Overview

Welcome to **Games and gamification in education**.

The aim of this session is to learn more about games and gamification and explore how they can be used effectively in a classroom to improve learner engagement, learner motivation and learner outcomes.

We will cover five key points in this session.

1. Introducing games and gamification and how they can be used in education.
2. Using scavenger hunts and treasure hunts and creating and using a QR Code.
3. Developing a game for use in class.
4. Developing gamified learning experiences.
5. Exploring ready-made online gamification solutions.

There is an activity after each part just to check that you are developing the knowledge needed to move on.

# Teachers on a Mission



Dear Game Player,

Welcome to the Teachers on a Mission game. You will notice that these Class Notes do not follow the videos exactly. They have been structured here for you without the game playing that takes place in the session. However, you will need a leaderboard as you go along, and we will print it in the Class Notes for you to fill in.

During the training, you will face certain challenges that you will earn points for. Your co-player is Rose, who calls herself 'IncrediTeacher' for the game.

- After each challenge, the presenter will tell you what IncrediTeacher's score is.
- If your score is higher than IncrediTeacher's, fill it in above her score, to show that you are winning.
- If your score is lower than IncrediTeacher's, fill it in below her score, to show that she is ahead of you.
- As you go along, you will have to add up your scores for each challenge to come to your final point. If your final score is higher than IncrediTeacher's, you are the winner of the game!

We hope you enjoy the game and achieve your goal – the search for engaged learners and excellent results.

Warm regards

The Vadea Team

This is what the leaderboard will look like.

# Your leaderboard

Leaderboard	
Player:	
Player: IncrediTeacher	
Player:	

# An introduction to games and gamification

## The essentials of gaming and gamification

Gaming and gamification in education holds many rewards, including greater learner engagement, higher learner marks and more success for you in and out of the classroom.

The first step before you design any game is to start with what you will want to achieve or teach (or in other words, your **outcome**) and then design the game.

### Reflection

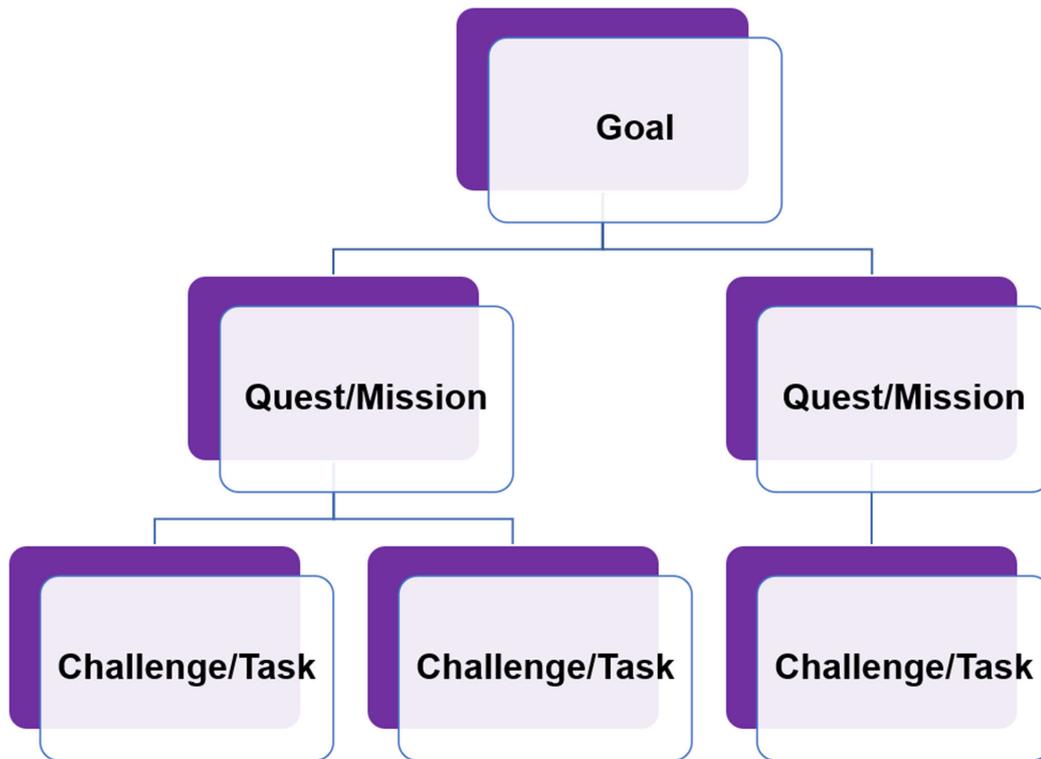
- Make notes in your PD Journal.
- What kind of games do you use for your classes?
- Make a list. This can include physical games, as well as board games or digital games. Even word games count as a game!
- Why do you use these games for teaching?

## The elements of games

Games have several common elements, although not every element is included in every game.

### Game structure

Games are made up of two or more of the following structural elements.



Structural elements of games.

## Goals

All games have a particular goal. A goal gives the game the context or reason to exist. The goal is most often in the form of a story. The main story of a game is the goal that needs to be achieved.

A goal is often made up of quests or missions that are, in turn, made up of a number of challenges or tasks.

When you design a game, you must put these in place so that your game has a structure.

In education, it is important to start with what you want to achieve or teach (your outcome) and then design the game.

## Quests and challenges

While a quest and a challenge are two different elements that can be used to engage and motivate learners, they share some similarities, and they have distinct characteristics.

### Quests

A quest in gamification refers to a journey or a series of tasks that players undertake to achieve a specific goal or outcome. Typically, this involves a narrative or storyline that unfolds as players progress through various stages or levels.

Quests often incorporate elements of exploration, problem-solving, and collaboration.

Key features of a quest include narrative, progression, objectives, and feedback and rewards.

- **Narrative:** A quest is driven by a narrative or story that provides context and gives meaning to the tasks or activities. This story is a story within the bigger story of the game.
- **Progression:** Players advance through different stages or levels in the quest, building upon their achievements and acquiring new knowledge or skills.
- **Objectives:** Clear goals or objectives are established, guiding players on what needs to be accomplished to complete the quest.
- **Feedback and rewards:** Quests often provide feedback and rewards to motivate players and reinforce their progress.

## **Challenges**

A challenge, however, focuses more on a specific task or problem that players must overcome. Challenges are designed to stimulate critical thinking, problem-solving, and decision-making skills. They are typically shorter in duration and may not be connected to an overarching narrative.

All challenges have key features.

- **Problem-solving:** Challenges present players with a specific problem or task that requires them to apply their knowledge or skills to find a solution.
- **Time-bound:** Challenges often have a set time limit that creates a sense of urgency and encourages players to think quickly and efficiently.
- **Difficulty:** Challenges can vary in difficulty, ranging from relatively easy to more complex; this caters to players of different levels of proficiency.
- **Feedback and Recognition:** Challenges provide feedback on players' performance and may offer recognition or rewards based on their success.

## **Rules**

All games need rules.

When you create games for your classes, you must make the rules clear to everyone, and discuss them before the game begins.

## **Player names and avatars**

Not every game has a player name option. Player names do have value, though. Choosing a player name means that you can be 'someone else' during the game. Just think how useful that can be for learners. They don't have to feel anxious about their work, because it is the work of the player in the game, not theirs. A player name can be either a person's own name, or a different one.

It is worth noting that research suggests that people who engage with technology on a regular basis tend to enjoy creating online alter-egos, or, in other words, different selves. This is true for social media, and even more so for online games.

An avatar is an image that represents you online. Younger people often enjoy creating a digital avatar with powerful skills and abilities to represent them.

## **Rewards**

Apart from the educational rewards you and your learners will reap from games and gamification, there are also functional rewards that form part of games.

These include:

- a badge
- a game currency that the learner can exchange for rewards, for example extra time on a task or going to break early
- special points, for example life points and experience points that they can use in the game

## **Points**

In many games, the idea is that if you do something right, you get rewarded for it. This in turn gives you status, and then encourages others to be just like you.

Most often, points are the basic way in which games reward you for getting things right. You can often use these points to buy things, or you can exchange them for other things.

You will sometimes see these points being called XP or experience points. Other sorts of points are possible, too. For example, they may be health points, or action points. It all depends on the story on which the game is based.

After a certain number of points have been won, the player can either move to another level, or get a badge. Or, when a player earns the highest number of points, that person wins the game.

There is a danger that if players must collect too many points or too many badges, or if it is too easy to collect them, these will lose value and meaning. For this reason, you should have very clear rules about how the points can be earned, and what they can be exchanged for when you create a game.

## Leaderboards

When a game has many rounds, it might have a leaderboard.

A leaderboard ranks the players according to the number of points they have. This can challenge others to compete to be better than the person higher up on the leaderboard. But you should be careful because sometimes this can result in a player simply giving up because she or he has too few points. As the creator of the game, it is up to you to make sure this does not happen.

## Levels

More complex games may have various levels that a player must move through. To progress from one level to the next, the player would need to be successful at a quest or a challenge or collect a certain number of points or rewards.

### Task

- You have selected your player name. Now, think about what you would have liked your avatar to look like if this was a live, online game.
- Play around and search for images on the internet, until you find an avatar that you identify with yourself.

## Challenge

- Please complete Challenge 1.
- If your score is higher than IncrediTeacher's, write it down in the top row to show that you are winning.
- If your score is lower than IncrediTeacher's, write it down in row below hers, to show that she is ahead

Leaderboard: Challenge 1	
Player:	
Player: IncrediTeacher	5
Player:	

## Games vs gamification

It is important to differentiate between games and gamification.

### Games

Games are complete, structured activities with a beginning and an end that involve rules, goals and challenges. Games can be played alone or with others, and they often involve some form of competition or cooperation. Typically, games are designed to be engaging and fun, and they often have clear win-lose outcomes.

Games are best for working with content, especially if you want to do formative-type assessments to check that the learners have grasped an idea.

Games work well for short term goals. For example, can the learners identify the three things needed for photosynthesis, or do the learners know how to spell certain words?

## **Gamification**

Gamification is an approach to making non-game activities more engaging or motivating. Gamification borrows game elements like rules, challenges, points, leaderboards, badges and goals from games to make non-games more fun or more rewarding.

Gamification is designed to encourage people to complete certain tasks or behaviours. Your Clicks card, Discovery Health challenges, and any other shop or business-related points-scoring activity are examples of this. These companies want to motivate you to spend more at their store or on their services, not on someone else's.

Gamification can often involve creating small games or challenges within a larger activity to make it more engaging. So, there is some overlap between the two concepts of gaming and gamification, and they can both be used to create engaging and enjoyable experiences for users.

Gamification is best for modifying behaviours (for example, doing homework, focusing on a task, keeping the classroom tidy or anything that takes place over a longer time and aims to change behaviours).

## **Contexts for gamification**

Gamification can be applied to a wide range of contexts.

Gamification can be used to make learning more engaging and enjoyable for learners. This can involve adding game-like elements to educational apps, creating educational games, or using gamification to encourage learners to complete homework or study more effectively.

Gamification can be used to encourage people to adopt healthier habits, such as exercising regularly or eating a balanced diet. This can involve using fitness apps that track progress and offer rewards for meeting goals, or creating games that require physical activity.

Gamification can be used to make marketing campaigns more engaging and interactive. This can involve creating contests, challenges or games that encourage customers to interact.

Gamification can be used to make training and development programs more engaging and effective.

## **The start of gamification**

Businesses wanted ways to get more commitment or engagement from their clients. They researched this and noticed something very interesting about regular game players, especially players of Massive Multiplayer Online Games. Once these game players started to play, they went into their own world and would play for hours and hours.

What was even more remarkable was that even people who had difficulty concentrating on tasks became committed to playing the game. The term that we often hear used to describe this, is flow. 'I was in the flow and did not notice the time.' Have you ever said that or heard it? Some people would also say they were in 'in the zone.'

Businesses realised that games have certain elements or components in common. And these elements make a game engaging.

## **Why include games and gamification in education?**

A key reason for adding games and gamification to education is to get learner engagement. We often hear that our learners today are not engaged and that they seem to be distracted, uninterested and careless about education.

What games and gamification can offer is the chance for them to become committed to achieving learning outcomes.

A second reason is that it makes learning more fun. It is a lot more enjoyable to learn numbers and facts playing a game than it is to learn them while you are sitting and reading them from a book, for example!

Thirdly, and of course this does depend on the game or game-elements that have been added, it fosters teamwork and cooperation from learners when they must work together to complete a challenge.

## Challenge

- Please complete Challenge 2.
- If your score is higher than IncrediTeacher's, write it down in the top row to show that you are winning.
- If your score is lower than IncrediTeacher's, write it down in row below hers, to show that she is ahead.
- Remember to add your new score to the points you earned for the previous challenge. See IncrediTeacher's example below.

Leaderboard: Challenge 2	
Player:	
Player: IncrediTeacher	 $5 + 2 = 7$
Player:	

## Reflection

- Make notes in your PD Journal.
- Are you enjoying the game so far?
- Can you see how a teaching experience may be gamified?
- Do you have ideas for how to gamify your own lessons?
- Jot down some ideas to follow up on when you have completed this session.

# Game players

The players are the most important part of a game.

There are different types of players, and you should aim to develop a game or gamification concept that allows each one of them to have a chance to participate and show their strengths.

These are the six player types as identified by Andrzej Marczewski.

1. **Socialisers:** Love teamwork and the social part of games.
2. **Achievers:** Aim to be the best, and they like collecting things such as points or badges.
3. **Free spirits:** Make their own decisions and like to go at their own pace.
4. **Philanthropists:** Help others for the betterment of the whole game.
5. **Mere players:** Play just for the fun of it.
6. **Disrupters:** Disturb and unsettle the game.

You will find that there are more mere players than any other group in your classes. There will be fewer socialisers, free spirits and achievers. Disrupters are rare. Pay careful attention to the disrupters and manage them carefully.

## Challenge

- Please complete Challenge 3.
- If your score is higher than IncredITeacher's, write it down in the top row to show that you are winning.
- If your score is lower than IncredITeacher's, write it down in row below hers, to show that she is ahead.
- Remember to add your new score to the points you earned for the previous challenges. See IncredITeacher's example below.

## Leaderboard: Challenge 3

Player:

Player:  
IncrediTeacher

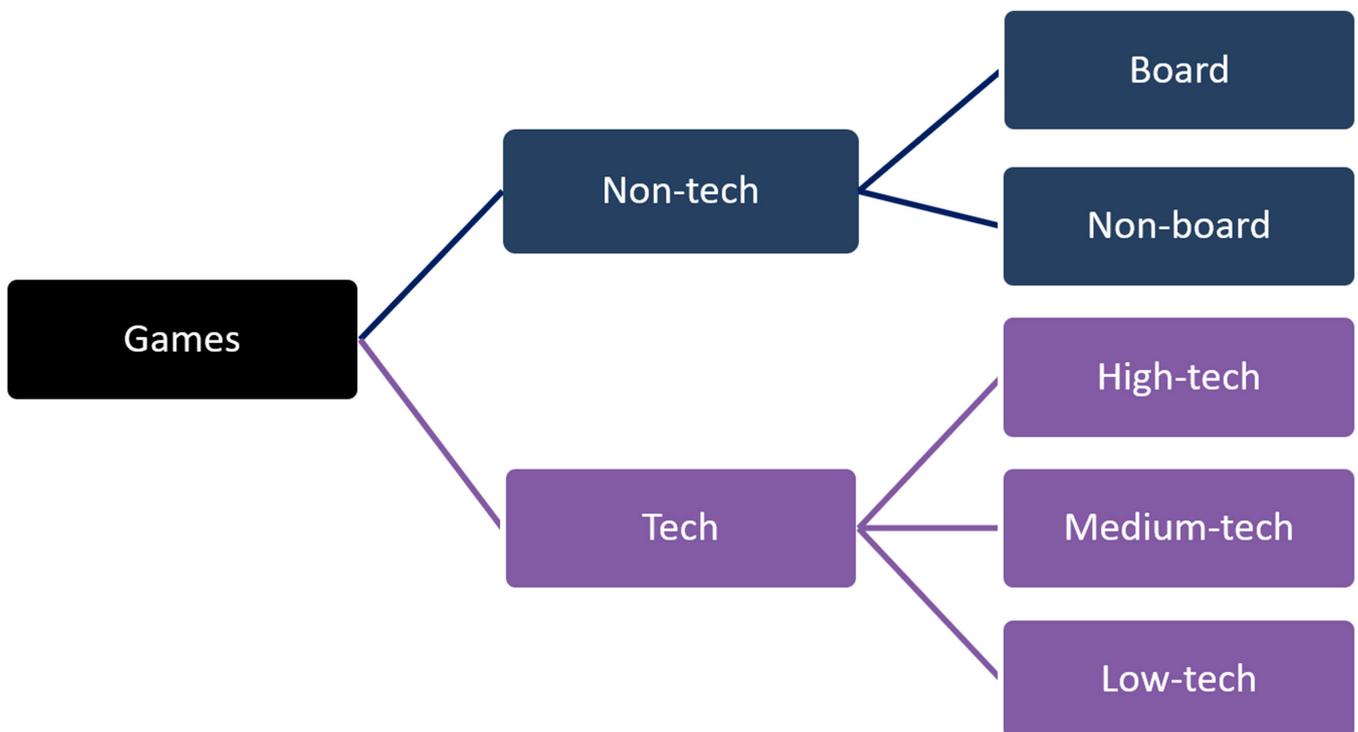


$$5 + 2 + 10 = 17$$

Player:

## More about games

### Types of games



At the first level, let's differentiate between those games that use digital technology and those that don't use it.

The non-tech category can be split into board games and non-board games. Board games include games such as monopoly and chess, as well as any paper-based games (for example battleships, or general knowledge games). Non-board games include any game that does not need equipment, such as 'I spy with my little eye'.

Tech games can be divided into three types.

1. High-tech games, for example online role-player video games such as Mortal Kombat, World of Warcraft and Pokémon.
2. Medium-tech games, for example app-based games on a digital device.
3. Low-tech games include using your smartphone with paper objects for the game.

It is possible to create educational versions of all these types of games. The deciding factor will be your level of technical expertise as to whether you are creating a non-tech non-board game, or a high-tech online video game. All these educational games would have in common the basics of all games: Rules, a goal, challenges, players and points. Since they are educational games, they would also have an educational outcome; when the learners play the game, they will be learning or reinforcing concepts or skills.

## Challenge

- Please complete Challenge 4.
- If your score is higher than IncredITeacher's, write it down in the top row to show that you are winning.
- If your score is lower than IncredITeacher's, write it down in row below hers, to show that she is ahead.
- Remember to add your new score to the points you earned for the previous challenges. See IncredITeacher's example below.

### Leaderboard: Challenge 4

Player:

Player:  
IncrediTeacher



$$5 + 2 + 10 + 3 = 20$$

Player:

### Challenge

- Please complete Challenge 5.
- If your score is higher than Increditeacher's, write it down in the top row to show that you are winning.
- If your score is lower than Increditeacher's, write it down in row below hers, to show that she is ahead.
- Remember to add your new score to the points you earned for the previous challenges. See Increditeacher's example below.

### Leaderboard: Challenge 5

Player:

Player:  
IncrediTeacher



$$5 + 2 + 10 + 3 + 4 = 24$$

Player:

# Games in education

## All about treasure hunts and scavenger hunts

In a treasure hunt, there is often only one item to be found after the player solves a series of clues. This item is the treasure. It is some sort of prize or reward that one person will win.

A scavenger hunt involves finding many things. The winner is the learner who manages to collect all the items in the scavenger hunt.

A scavenger hunt can provide clues, or it can be a list of items or tasks. You can make it more complex by giving each item a different number of points and setting a time limit. The learners will need to decide whether to collect a whole lot of the lower-points items that might be easier to find, or some of the higher-point items that might be harder to find. The winner of the hunt is the player with the highest score.

### Steps to organise a scavenger hunt

#### Step 1: Determine the educational outcome

As for all educational games, first decide on the outcome of the game. What do you want your learners to be able to do or to know when they have completed the game? Now decide on the other elements of the game. For example, if it is a game based on Natural Sciences, it could focus on identifying types of trees.

#### Step 2: Decide on the rules of your scavenger hunt

- Can learners discover the items or do the tasks in any order, or must they follow a specific order?
- Can learners discover many items from one location, or are they limited to finding one item per location? If they're doing tasks, should they be limited to one task only, or could they be asked to do many tasks at a specific location?
- Can teams split up, or must they stay together during the scavenger hunt?
- Are certain areas out of bounds? For example, anywhere outside of the school grounds?

### **Step 3: Determine the goal of the hunt**

Remember, this is the story of the scavenger hunt. Why are they doing it? You can just say, 'Go and find these things'. But where is the fun and excitement in that? What about 'Help to save the trees in your school grounds by finding the following items'?

### **Step 4: What is the challenge?**

Prepare the lists of things the learners must find or the tasks they need to complete. Is there a time limit?

### **Step 5: Points or not?**

Decide if there are going to be points with a ranking, or just one winner.

### **Step 6: Technology or not?**

Decide if technology is going to be used. For example, QR Codes with smartphones or tablet devices can be used. Alternatively, the hunt can be all paper-based.

## **Tips for a scavenger hunt**

Here is a list of tips for a successful scavenger hunt.

- Keep the list of items or clues age-appropriate for the learners.
- Keep to a maximum of ten clues. You don't want this to be overwhelming or to become boring.
- Make sure the playing area is safe and free of hazards.
- Be creative with your list of items or clues to make the game more engaging.

## Challenge

- Please complete Challenge 6.
- If your score is higher than IncrediTeacher's, write it down in the top row to show that you are winning.
- If your score is lower than IncrediTeacher's, write it down in row below hers, to show that she is ahead.
- Remember to add your new score to the points you earned for the previous challenges. See IncrediTeacher's example below.

Leaderboard: Challenge 6	
Player:	
Player: IncrediTeacher	 $5 + 2 + 10 + 3 + 4 + 2 = 26$
Player:	

### Task: Preparation

At the end of the next lesson, you will get a task (or challenge!) to create your own scavenger hunt. You can start preparing for that now already.

You must create clues for the learners. You can make it simple (for example, just telling them where to look for the next clue). Or you can make it more difficult (for example, with riddles). Or perhaps they need to answer a question that will tell them where to look next? The choice is yours.

Once you have written all the clues, you will create a QR Code for each one, and put it in place. You will learn how to do that in the next lesson.

# QR Codes

The Quick Response, or QR Code is a two-dimensional version of the Barcode that can provide a wide variety of information almost instantly when it is scanned by a mobile device.

A QR Code can encode words and phrases such as internet addresses.

In the past, we needed a special app to read a QR Code, but nowadays, we can just use our smartphones or tablet device cameras to scan the QR Code.

Watch the training video to see how you can use [www.qrcode-monkey.com](http://www.qrcode-monkey.com) to create QR Codes for your scavenger hunt.

## QR Codes in education

You can use QR Codes to enhance educational content.

QR Codes can be placed in notes to link to online material and online videos or short tutorials. This makes it easier for the person who must type in the web address and also prevents mistakes.

QR Codes can be used in any subject, for example, in History, historical trails or walks can be linked to educational content using QR Codes. These QR Codes can be used to link to content on Wikipedia or to videos of historians discussing the significance of the site.

### Task

#### Instructions for Challenge 7

- Create your own QR Code scavenger hunt.
- Use at least five clues.
- Let your learners have fun!
- Ask your learners for feedback: What did they like about the activity? Is there anything they would change?
- Use their feedback when you develop your next treasure hunt.

## Challenge

- Please complete Challenge 7.
- If your score is higher than IncrediTeacher's, write it down in the top row to show that you are winning.
- If your score is lower than IncrediTeacher's, write it down in row below hers, to show that she is ahead.
- Remember to add your new score to the points you earned for the previous challenges. See IncrediTeacher's example below.

Leaderboard: Challenge 7	
Player:	
Player: IncrediTeacher	 $5 + 2 + 10 + 3 + 4 + 2 + 20 = 46$
Player:	

# Designing your own game

## Steps to design your own game

### Step 1: Identify a problem

What skill or knowledge from the curriculum do you want the learners to have when they have played the game? This skill/knowledge will be the problem. Playing the game will solve it.

### Step 2: Generate different ideas

To get ideas for games, consult with your colleagues and your learners. Ask them what kinds of games they like to play. This will be the starting point for the type of game you will design.

### Step 3: Design the rough draft of your game

A formal way of putting this would be to say, 'develop the prototype of your game'. The goal is to have something that you can then refine with different iterations or versions until you have a game that works.

### Step 4: Test the game

Play it with colleagues and learners and get their feedback. Incorporate any improvements or additions that come from your testing.

Now, all that's left to do is have your learners play, enjoy and learn.

## Design checklist

- What is the goal?
- What is the challenge between the player and the goal?
- How do you play the game? What are the rules of the game?
- What are the components of the game? In other words, what physical things are needed to play the game? Use the materials and technology that you have available. Paper, pen and dice can be powerful tools for learning.

# Gamification in education

It is possible to introduce game-like elements into your classroom and gamify your learners' experience.

## Gamification in your classroom

### Steps to gamification in your classroom

#### Step 1: Determine the learning objectives

The first step in introducing gamification into your classroom is to determine the learning objectives. You must identify the skills and knowledge that you want your learners to acquire while they enjoy the game elements.

Don't think like this: To gamify the lesson, what must I teach?

Instead, think like this: What are the learning objectives? How can I use game-like elements to increase engagement and learning?

#### Step 2: Create a story

What story will drive your gamification experience?

Of course, you can simply just add points and a leaderboard to your classwork, but that will only motivate learners for a little while.

It makes sense to match your story to your subject and the learning objectives. For example, in Maths, your story could involve famous mathematicians who are seeking to escape somewhere. Or in English, perhaps an author needs to complete a set of tasks to have their new book published.

#### Step 3: Identify the game elements

Once the learning objectives and story have been established, you must identify the game elements that you will use to engage your learners.

Remember, the game elements could include:

- story or goal
- rules
- player names or avatars
- rewards, badges, special points

- quests or missions
- challenges
- points (and leaderboards)
- levels

These elements provide learners with a sense of achievement and motivate them to continue learning.

For example, you could award points for completing tasks, such as homework or quizzes. Learners could then use these points to unlock different levels or earn badges. Leaderboards could be used to display the top-performing learners and encourage healthy competition.

#### **Step 4: Design the game elements**

You must design the game elements. This involves creating the tasks, challenges, and rewards that learners will encounter throughout the game. The game elements should be aligned with the learning objectives and story. They should provide learners with a sense of accomplishment as they progress through the game.

#### ***Examples of gamification***

- A storyline or narrative connects quests together and makes the learning experience more engaging.
- A quest could have learners solve a series of problems, research a particular topic, or complete a project to progress to the next level.
- Create challenges in which, for example, learners must collaborate to solve a problem, complete a task, or participate in a classroom activity.
- Create a points system in which learners can earn points for completing tasks, such as homework or participating in class discussions.
- Display a leaderboard in the classroom to show the top-performing learners and motivate others to catch up.
- Add levels to your gamification experience to make it more complicated to manage. This also provides more opportunities for learners to achieve success. Don't create too many levels though because it can be dispiriting to see that there are many levels to achieve before winning. We recommend five levels as the maximum.

- Create badges for different achievements, such as completing a project, mastering a new skill, or participating in a classroom activity. A new badge can also be awarded for achieving a level. Allow learners to showcase their badges on their backpacks, notebooks, or in a digital portfolio to display their achievements and motivate others.
- Offer rewards such as extra marks, free time, or a small prize for learners who achieve a specific goal or level. You could use a gamified reward system in which learners can earn special tokens (for example gold coins, health points or experience points) that can be used to unlock new abilities for an avatar if there are role-playing, or to unlock a new level.

### **Step 5: Implement the game elements**

Once the game elements have been designed, you must implement them into your daily teaching. This involves introducing the game elements to learners and explaining how they work. You should also provide learners with feedback and support as they progress through the game.

It is essential that you remain committed to the gamification elements and apply them consistently. Start off by using a game with learners and then slowly introduce gamification. And even then, keep the process simple and build up to more complex games.

Make sure you have an easy way to keep a record of points, levels and badges or whatever elements you use, for each learner.

### **Step 6: Evaluate the effectiveness of the gamification**

The final step in introducing gamification into the classroom is to evaluate its effectiveness. You should monitor learner engagement and performance to determine if the game elements are effective in achieving the learning objectives. This will help you to identify areas in which you can improve the game elements and make adjustments as needed.

Don't forget to collect feedback from learners on their experience with the game elements. This feedback could be used to make adjustments to the game elements and improve their effectiveness in engaging learners.

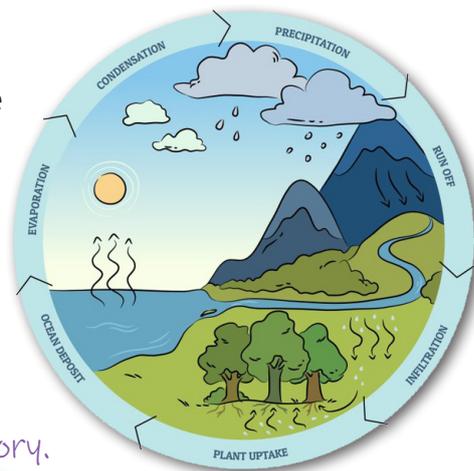
Always carefully consider your learners' needs and interests at every step to ensure that the gamification experience is effective and meaningful.

## Reflection

- Make notes in your PD Journal.
- Make a list of possible learning objectives you would like to achieve with gamification in your classroom.

# A teaching plan using gamification

The following teaching plan show how gamification can be incorporated into a teaching plan for teaching the water cycle in Grade 9 Natural Sciences. It focuses only on the game elements, not the content.



## Grade 9 Natural Sciences: The water cycle

### Story

We start off with the story.

You live on a planet similar to Earth. Over time though, humans created a great deal of pollution, and as a result, drinking water is becoming scarce. You need to come up with a campaign to reduce the problem.

You will work in small teams. Your teams must complete two quests and earn a badge for each.

**Your quests are:** A Quest for Knowledge, and a Quest for Understanding. You can only enter the challenge when you have earned both badges.

**The challenge is:** Presenting your campaign.

**The team that creates the best campaign will be declared the Saviours of the Planet!**

### How do you earn a badge?

You will be able to earn points for your team. When a team has achieved 15 points and completed the task for the quest, the team will earn the badge.

You can earn points for:

- your participation in-class activities (one point per positive participation)
- homework (one point for each homework task completed)

## Quests and challenges

There are two quests and a challenge in this game.

### Quest 1: A Quest for Knowledge

1. In your team, use all the resources you can to find out about the water cycle. You can use the internet, textbooks and any other suitable resource.
2. When you are ready, complete the quest assignment: The Water Cycle Definitions Worksheet.

Points can be earned for:

- team participation (one point per positive participation)
- homework (one point for each homework task completed)

**Your badge will be awarded when the team has 15 points and a correct and complete worksheet.**

### Quest 2: A Quest for Understanding

1. Your team must perform a play in which you demonstrate how the water cycle works.
2. Each learner must play a role and must be able to explain how they fit into the water cycle as a cloud, a water drop, a river or whatever part of the water cycle.

Points can be earned for:

- team participation (one point per positive participation)
- homework (one point for each homework task completed)

**Your badge will be awarded when the team has 15 points and presents a play that demonstrates how the water cycle works.**

### Challenge: The Campaign

1. When you have both badges, your team can enter the Final Challenge.
2. Decide on a message that you believe will help people realise what a problem water pollution is for your planet. Create a poster and at least three social media posts that promote your message.
3. Present your campaign poster and social media posts to the class.

**The class will vote on who becomes the Saviours of the Planet!**

## Evaluation of the teaching plan

This gamified lesson or teaching plan would be a positive experience for the learners, and they are likely to be engaged and motivated to learn more.

Game elements	Teaching plan
Story or goal	Yes
Rules	Yes
Player names or avatars	No
Rewards/Badges/Special points	Badges
Quests or missions	Yes
Challenges	Yes
Levels	No
Points	Yes
Leaderboard	No

- There is a clear story: they must save their planet.
- A Water Cycle Definitions Worksheet is provided by the teacher.
- Rules are provided and are quite clear. Learners do certain things for points, get enough points and complete the quest and then get a badge that allows them to go on to the next quest.
- In these lessons, there are no player names or avatars. But this does not detract from the gamification.
- There are two quests that must be achieved.
- There is one challenge. It was not designed completely successfully, though. It is hard to differentiate between what the teacher said was a quest, and what was a challenge. The challenge seemed just like a quest.
- There are no levels, but in some ways the two quests do work like levels.

- Points can be earned, but there is no leaderboard as the points count towards achieving a quest. There is no points competition here, in other words. Something that might also be confusing, is the points awarded for team participation. Exactly what would this constitute? What if the teams are fairly large (for example around 10 learners)? Wouldn't that mean they would earn the 15 points very quickly? Would this work in your class?

### Task

- Outline how you would improve the Save the Planet Game.
- Read the gamification-based 12-week teaching plan for Grade 11 English First Additional Language on the topic of Shakespeare's *Julius Caesar*.
- Consider the game elements that are proposed, and comment on them.

## A 12-week gamification-based teaching plan for Grade 11 English First Additional Language

### Topic: Shakespeare's *Julius Caesar*

#### Points

Introduce the idea that what the learners do in various activities will allow them to earn points. Tell them there will be a leaderboard to track their progress.

#### Introduction to Julius Caesar Challenge

Challenge learners to research and present on the historical context of *Julius Caesar*. Learners can earn points for participating in the discussion.

#### Shakespearean Language Game

Challenge learners to work in teams to complete a *Julius Caesar* crossword puzzle language game in which learners must match words from *Julius Caesar* to their modern-day equivalents.

The team that completes the puzzle first, earns bonus points for each member of the team. All teams will receive points for completing the crossword puzzle.

### Reading the Play Challenge

Challenge learners to read and analyse each act of *Julius Caesar*. Learners can earn points for completing the reading and analysis of each act.

### Character Analysis Video Challenge

Challenge learners to analyse various characters in *Julius Caesar* and then create a video in which they share their analysis. The team that creates the most informative and engaging video earns bonus points.

### Julius Caesar Essay Challenge

Challenge learners to apply their knowledge, in a written essay, of *Julius Caesar* as it relates to a real-world problem or issue, such as power struggles or political corruption. Award points for content, structure and insight.

## Evaluating a gamified learning experience

Let's evaluate the *Julius Caesar* plan.

Game elements	Teaching plan
Story or goal	No
Rules	No
Player names or avatars	No
Rewards/Badges/Special points	No
Quests or missions	No
Challenges	Yes
Levels	No
Points	Yes
Leaderboard	Yes

- Story: There is no story, only challenges. This can result in making the challenges seem a little disjointed, even though they all relate to Shakespeare's *Julius Caesar*.
- No rules, beyond usual classroom rules, are mentioned.
- There are no player names or avatars.
- Points are awarded, but there are no badges, rewards, or special points. Badges could be awarded for the various challenges to strengthen the gamification.
- There are no quests or missions. There are only a number of challenges. In the challenges the learners work individually and in teams to complete tasks related to the play.
- There are no levels to be achieved.
- Learners earn points for their participation in various activities. More detail should be provided about how many points can be awarded for different activities.
- A leaderboard is used to track and display learner performance. However, there is no conclusion to this. It is assumed that the learners will look at the leaderboard from time to time, but since there is no reward mentioned, the learners have to feel motivated by getting points, and perhaps only by being the leader on the leaderboard.

This gamification idea could work, especially if there were a clear reward and there was better use made of the leaderboard.

## Challenge

- Please complete Challenge 8.
- If your score is higher than IncrediTeacher's, write it down in the top row to show that you are winning.
- If your score is lower than IncrediTeacher's, write it down in row below hers, to show that she is ahead.
- Remember to add your new score to the points you earned for the previous challenges. See IncrediTeacher's example below.

Leaderboard: Challenge 8	
Player:	
Player: IncrediTeacher	 $5 + 2 + 10 + 3 + 4 + 2 + 20 + 20 = 66$
Player:	

Who won? You, or IncrediTeacher? If your score is lower than hers, consider going through the training materials again!

## Task

Outline what elements you would add to the Julius Caesar gamified teaching plan to improve it.

# Examples of online gamification solutions

You can find several ready-made solutions online to assist you in your aim to use gamification to improve learner motivation, engagement and outcomes.

## ClassDojo

ClassDojo is a communication platform that connects teachers, learners, and families. It is used by more than 50 million learners and parents worldwide, and what is exciting is that the platform is free for teachers. It offers a range of features such as messaging, sharing photos and videos, and creating digital portfolios for learners.

Using gamification, and points in particular, ClassDojo works as a digital behaviour management and skills development tool for the classroom that uses gamification to achieve its goals.

### Signing up

You can sign up to ClassDojo.

1. Access ClassDojo at the following URL: [www.classdojo.com](http://www.classdojo.com)
2. Sign up is in the top right corner of the landing page.
3. There are four options to sign up: Parents, teacher, student or school leader.
4. To start, find your school.
5. Select Options: Communicating with Families, Managing Behaviour, Learning at Home, Collaborating with Students, Social Emotional Learning, and Classroom Tools.

### Creating a class

You can create a class in ClassDojo.

1. Choose the grade you want work with and say if you have any co-teachers.
2. Add the learners' names, **or** copy and paste your class list from your device into the Text Box, **or** import it from Microsoft Word or Microsoft Excel.

3. Decide if you want to connect with the families. If so, follow the steps.

## Exploring the class page

You will find these features in the Toolkit.

- **Timer Button:** To time activities.
- **Random Button:** Chooses any one of the learners in the class. This makes sure that you don't keep asking the same learner to answer questions.
- **Group Maker Button:** Automatically makes up groups using your chosen rules.
- **Noise Meter Button:** Picks up the loudness of the noise that is going on in your class.
- **Instructions Button:** Allows you to type classroom instructions in and save them for later, so that you can put this up on a screen. Learners will be able to refer to the instructions that you have given them for an activity.
- **Think, Pair and Share Button:** Creates social emotional awareness activities in the class.
- **Today Button:** Gives you the opportunity to put in any announcements for the day, for example a welcome message or a note about a special event.
- **Music Button:** Plays music for the lesson for focus or for a particular activity.
- **Attendance Button:** Allows you to mark attendance quickly.
- **Options Button:** Allows you to invite families, view reports, edit class, link learners, archive, add a co-teacher, reset the points or change the display settings.

## Behaviour modification

ClassDojo is a way to modify behaviour using gamification. It does this by assigning points (called Dojos) for certain behavioural skills.

It is possible to assign points for helping others, for being on task, for participating, for persisting, for engaging in teamwork, and for working hard. You can add in various other skills and say how many points each is worth.

The Needs Work Category is for unwanted behaviours and allows you to give penalty points.

You can create the set of skills that you want to promote and identify what you want to happen less often in your class. Assign positive or negative points to each. Then explain all this to the learners. While they work through different activities you will be able to assign these Dojos or points to them.

## Reports

You can generate easy to read and useful reports with ClassDojo.

1. Click Options, View Reports.
2. Options include:
  - a whole class report for a week, shown as a graph
  - a spreadsheet in the form of a downloadable CSV file for Excel, indicating for points given (CSV stands for comma separated values)
  - attendance reports

## Advantages of using ClassDojo

Using ClassDojo can be advantageous to your teaching.

- ClassDojo is a ready-made gamification solution that uses points to improve classroom behaviour.
- It helps the learners improve their behaviour. Learners love getting Dojo points, and they enjoy hearing the sound of a positive Dojo. Both positive and negative Dojos have distinctive sounds that learners can immediately identify. This is really positive and negative reinforcement of behaviour and encourages the development of specific skills.
- It enables teachers to share information with parents. The results are recorded, and the teacher can email a report about a learner's behaviour to his or her parents, and teachers can set the frequency of these reports.
- Instant feedback to learners on their behaviour encourages them to modify it as necessary.
- ClassDojo replaces the traditional star chart on which you placed a gold star next to a learner's name if they performed well. With ClassDojo, the results are recorded immediately with one tap, so a lot of time is saved.

## ClassDojo's challenges

There are some challenges to using ClassDojo.

- In some cases, the pursuit of points becomes more important to learners than actively participating in the lesson. However, if this is managed well, it does not need to happen.
- Some learners may disrupt lessons to dispute their negative points or to demand that another learner be penalised. You can easily come up with a strategy to avoid this.
- The constant stream of points can lead to the teacher being tied to the computer desk, rather than circulating and monitoring learners' tasks. Rather give points at the end of the lesson or use a tablet or smartphone.
- ClassDojo often works better for younger learners, but older ones may be as excited by the system.

## Classcraft

Classcraft is a sophisticated online gamified learning experience that allows learners to take on avatars, go on quests, earn experience and health points and change their behaviour at the same time. It is well worth exploring if you teach older learners. At the time of writing there were free and paid versions that you could use.

### Signing up

Access Classcraft at the following URL: [www.classcraft.com](http://www.classcraft.com) and follow the steps to sign up.

### Reflection

- Make notes in your PD Journal.
- Now that you have experienced gamification, played educational games and made a game, what do you think?
- Are you going to introduce these two elements into your classroom?
- If not, why not?
- If you are, what are you going to do first?

# About the Final Assessment



At the end of this training session, you will be asked to complete the Final Assessment.

If you complete the Final Assessment successfully, you will qualify for your virtual badge and certificate. You can see a sample here.



# Final Assessment

Indicate the **ONE** correct response for each question.

1	What are some possible rewards in a game, besides learner engagement and higher marks?
a	Just having fun, for the heck of it.
b	Extra time on a task or being given an early break.
c	Being paid in cash.
2	Which statement best describes a quest in gamification?
a	A journey or series of tasks to achieve a specific goal.
b	A specific task or problem that requires critical thinking.
c	A game element that provides feedback and rewards.
3	What is a key characteristic of a challenge in gamification?
a	It is narrative-driven with stages or levels.
b	It is a problem-solving task with a time limit and difficulty level.
c	It provides feedback and rewards to motivate learners.
4	How are points used in games and gamification?
a	To buy or exchange items for challenges.
b	To progress to lower levels.
c	To determine the winner of the game.
5	What is the main difference between games and gamification?
a	Games have win-lose outcomes, while gamification does not.
b	Games are complete activities, while gamification enhances non-game activities.
c	Games involve rules, challenges, and points, while gamification does not.
6	_____ not necessary for a game to be considered a game?
a	A story or goal element is
b	Player names or avatars are
c	Rewards and badges are

## Final Assessment (continued)

**Indicate the ONE correct response for each question.**

7	What are the different types of players identified by Andrzej Marczewski?
a	Achievers, socialisers, free spirits, philanthropists, mere players, disrupters.
b	Gamers, learners, leaders, followers, observers.
c	Beginners, intermediates, experts, masters.
8	Points are the basic way in which games reward players for getting things right.
a	True
b	False
9	Players are the most important element of a game.
a	True
b	False
10	Gamification cannot occur in education, health and fitness, marketing, and employee training because it is not serious enough for these fields.
a	True
b	False
11	What is the purpose of gamification in education?
a	To make non-game activities more engaging and motivating.
b	To replace traditional teaching methods with games.
c	To eliminate the need for learning objectives.
12	What is the first step in introducing gamification into the classroom?
a	Identifying game elements.
b	Creating a story.
c	Determining learning objectives.
13	How does ClassDojo use gamification in the classroom?
a	By providing a communication platform for teachers, learners, and families.
b	By using points as a behaviour management and skills development tool.
c	By offering features such as messaging and digital portfolios.

## Final Assessment (continued)

Indicate the ONE correct response for each question.

14	What is one benefit of using ClassDojo for gamification in the classroom?
a	It allows for effective communication between teachers and parents.
b	It replaces traditional teaching methods with games.
c	It offers ready-made solutions for implementing gamification.
15	Which of the types of players identified by Andrzej Marczewski must a teacher be aware of as someone who could disturb the flow of a game?
a	Disrupter
b	Achiever
c	Observer

# Additional Resources

Apart from the videos in this course, Via Afrika also have the following videos to help you with online assessment.

## **How to add a question to an existing Google form**

<https://www.youtube.com/watch?v=mNkAIAUFz7o>

## **How to add the Flubaroo add-on to Google Sheets**

[https://www.youtube.com/watch?v=Eorg\\_irU65Q](https://www.youtube.com/watch?v=Eorg_irU65Q)

## **How to create and preview a Google Form**

[https://www.youtube.com/watch?v=G5\\_Yo2R8ScM](https://www.youtube.com/watch?v=G5_Yo2R8ScM)

## **How to link Google Form to a Responses Sheet**

<https://www.youtube.com/watch?v=Ur3RzjZ0iJ8>

## **How to set up Flubaroo autograding on a Google Sheet**

<https://www.youtube.com/watch?v=Rzvz2tXp1XI>

## **How to share a Google Form**

<https://www.youtube.com/watch?v=G0IHIS4G3s0>

## **Introduction to Google Forms**

<https://www.youtube.com/watch?v=KACE4ymx8ug>

## **Tips for assessing digitally**

<https://www.youtube.com/watch?v=o3zpZIEgDHU>

*[All resources last accessed August 2023]*

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Via Afrika  
40 Heerengracht, Cape Town,  
8001  
PO Box 5197, Cape Town, 8000  
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